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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,379	12/03/2003	Frederic Guerin	PO8040/PS-1136	5580
34947 7590 03/26/2007 LANXESS CORPORATION 111 RIDC PARK WEST DRIVE PITTSBURGH, PA 15275-1112			EXAMINER FIGUEROA, JOHN J	
			ART UNIT	PAPER NUMBER
			1712	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/26/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/726,379

Applicant(s)

GUERIN ET AL.

Examiner

John J. Figueroa

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

After Final Amendment under 37 CFR §1.116

1. An amendment under 37 CFR §1.116 has been filed in this application on December 14, 2006 and has been entered. Upon reconsideration, the finality of the previous Office action of August 15, 2006 is hereby withdrawn pursuant to 37 CFR 1.129(a).

Response to Amendment

2. The 35 U.S.C. 102(b) rejection of amended claims 1, 4-7, 10-13 and 15-17 as anticipated by USPN 5,683,819 to Mori et al., hereinafter 'Mori' (item 6 on page 2 of the Final Office Action of August 15, 2006, hereinafter 'FOA'), has been withdrawn in view of the amendment to the claims in Applicant's after-final response to FOA filed December 14, 2006, hereinafter 'Response'.

3. The 35 U.S.C. 103 (a) rejection of **claim 3** as unpatentable over USPN 6,268,417 B1 to Ozawa et al., hereinafter 'Ozawa', in view of Mori (item 8 on page 4 of FOA) has been withdrawn in view of Applicant's arguments in Response.

4. The 35 U.S.C. 103 (a) rejection of **claims 1 and 4-19** as unpatentable over Ozawa in view of Mori has been maintained for reasons previously made of record in item 8 on page 4 of FOA.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 3, 6 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,780,939 B2 to Guerin et al. (hereinafter 'Guerin'939').

Although the conflicting claims are not identical, they are not patentably distinct from each other because the shaped article recited in claim 2 of Guerin'939 can be a

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seal comprising a hydrogenated, nitrile rubber having a Mooney viscosity of 3 to 50, which is encompassed by the instant claims drawn to a polymer composite (sealant) comprising a hydrogenated nitrile rubber having a Mooney viscosity of less than 15.

7. Claims 1 and 3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 7,105,606 B2 to Ong et al. (hereinafter 'Ong'). Although the conflicting claims are not identical, they are not patentably distinct from each other because the polymer blend recited in claims 1-3 of Ong comprises a nitrile rubber having a Mooney viscosity below 10, which is encompassed by the instant claims drawn to a polymer composite comprising a nitrile rubber having a Mooney viscosity of less than 15.

8. Claims 1, 3-5 and 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 9 of copending Application No. 10/684,867 ('867 app).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the polymer composite, and process for preparing thereof, recited in claims 1-7 of the '867 app comprises a hydrogenated, nitrile rubber having a Mooney viscosity below 30, at least one filler and/or at least one crosslinking agent, m, which is encompassed by the instant claims drawn to a polymer composite (sealant) comprising a hydrogenated nitrile rubber having a Mooney viscosity of less than 15, a filler and/or crosslinking agent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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9. Claims 1, 3, 6 and 9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6 and 7 of copending Application No. 10/878,080 ('080 app). Examiner notes that this application is a continuation of Guerin'939, discussed above in paragraph #6.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the shaped article recited in claims 6 and 7 of the '080 app can be a seal comprising a hydrogenated, nitrile rubber having a Mooney viscosity of 3 to 50, which is encompassed by the instant claims drawn to a polymer composite (sealant) comprising a hydrogenated nitrile rubber having a Mooney viscosity of less than 15.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-5 and 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12, 13 and 15 of copending Application No. 10/926,532 ('532 app). Although the conflicting claims are not identical, they are not patentably distinct from each other because the shaped article recited in claims 12, 13 and 15 can be a seal comprising a hydrogenated, nitrile rubber having a Mooney viscosity of less than 15, which is encompassed by the instant claims drawn to a polymer composite (sealant) comprising a hydrogenated nitrile rubber having a Mooney viscosity of less than 15.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 3, 6, 7, 9, 12-14 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Guerin'939.

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Guerin'939 discloses a hydrogenated nitrile rubber polymer having a low molecular weight and a narrower molecular weight distribution prepared by the olefin metathesis of nitrile butadiene rubber, followed by hydrogenation of the resulting metathesized NBR; wherein said hydrogenated nitrile rubber has a Mooney viscosity (ML 1+4@100°C) in the range of from 3 to 50; and wherein the hydrogenation is more than 50% of the residual double bonds (RDB) present in the starting nitrile polymer

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being hydrogenated, preferably more than 99%. (Col. 3, lines 15-25; col. 6, lines 64-67) Guerin'939 discloses the use of the low molecular weight hydrogenated nitrile rubber for the manufacture of a shaped article, such as a seal, hose, bearing pad, stator, well head seal, valve plate, cable sheathing, wheel, roller, pipe seal or footwear component. (Col. 3, lines 26-30)

Guerin'939 also teaches that hydrogenated nitrile rubber (HNBR) prepared by the selective hydrogenation of acrylonitrile-butadiene rubber (nitrile rubber, a copolymer comprising at least one conjugated diene, at least one unsaturated nitrile and optionally further comonomers) has very good heat resistance, excellent ozone and chemical resistance, and excellent oil resistance. (Col. 1, lines 12-18) When coupled with the high level of mechanical properties of the rubber (in particular the high resistance to abrasion) it has found widespread use in, *inter alia*, the automotive, oil, electrical, mechanical engineering and shipbuilding industries. (Col. 1, lines 13-25)

Guerin'939 further discloses forming these nitrile rubber polymers in Examples 1-4 on col. 7-8. In the results depicted on Table 2 on col. 9, Guerin'939 discloses a nitrile rubber polymer in sample experiment #3 that has a Mooney viscosity of 3.

Thus, the claims are anticipated by Guerin'939.

12. Claims 1, 3-7 and 9-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Ong.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

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either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Ong discloses a polymer blend (composite) containing a nitrile rubber polymer having a Mooney viscosity below 10 (ML 1+4@100°C) and at least one other nitrile rubber polymer having a Mooney viscosity above 30, wherein said polymer blend has a multi-modal molecular weight distribution, and wherein the nitrile rubber polymer(s) can be fully or partially hydrogenated ("HNBR"). (Col. 2, lines 11-28; see Example 1a-b on col. 11)

Ong discloses that the hydrogenation is more than 50% of the residual double bonds (RDB) present in the starting nitrile polymer/NBR being hydrogenated, preferably more than 95% or 99% of the RDB as hydrogenated. (Col. 3, lines 46-52) Ong also discloses that fillers can be added to the blend, such as mineral fillers (col. 8, lines 19-67) as well as a crosslinking agent or a curing system, such as a peroxide curing system (col. 9, lines 36-59).

Ong further discloses a process for preparing the polymer blend (composite) wherein the nitrile rubber polymer having a Mooney viscosity below 10 is mixed in a solvent with a second nitrile rubber polymer and filler or other additives, and the blend is isolated from the solvent; wherein the by mixing can be performed in, e.g., an extruder at elevated temperature in a solvent prior to the removal of the solvent. (Col. 2, lines 29-35; col. 10, lines 30-59) The polymer blend is suitable for the manufacture of a shaped article, such as a seal, hose, well head seal, wheel, roller, pipe seal, gasket or footwear

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component prepared by injection molding technology in addition to wire and cable production via extrusion processes. (Col. 10, lines 60-67)

Thus, the claims are anticipated by Ong.

13. Claims 1, 3-7 and 9-18 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Application Publication Number 2004/0113320 A1 to Guerin, hereinafter 'Guerin'320'. Examiner notes that this reference is the printed publication of the '867 app discussed above in paragraph #8.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Guerin'320 discloses a polymer composite, and a process for preparing said polymer composite, said polymer composite formed from mixing a hydrogenated, nitrile rubber polymer (HNBR) having a Mooney viscosity below 30 (ML 1+4@100°C), at least one filler and/or at least one cross-linking agent; wherein a process for the manufacture of a shaped article is also disclosed that includes the step of injection molding said polymer composite; and wherein said HNBR can have a Mooney viscosity below 20 or below 10. (Abstract; page 1; paragraph [0001] and [0007] to [0011]; page 2, [0019])

Guerin'320 further discloses that the hydrogenation is more than 50% of the residual double bonds (RDB) present in the starting nitrile polymer/NBR being

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hydrogenated, preferably more than 95% or 99% of the RDB as hydrogenated. (Page 2, paragraph [0017]) Fillers can be added to the composite, such as silicates, glass fibers; metal oxides; carbonates; and mineral fillers (page 4, [0058] to [0069]), as well as a crosslinking agent or curing system, such as a peroxide curing system (page 5, [0071]).

Guerin'320 also discloses that the polymer composite is suitable for the manufacture of a shaped article, such as a seal, hose, well head seal, wheel, roller, pipe seal, gasket or footwear component prepared by injection molding technology in addition to wire and cable production via extrusion processes. (Page 5, [0075])

Thus, the claims are anticipated by Guerin'320.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1 and 4-7, 10-13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori.

Claims 1 and 6 (the independent claims) have been amended to limit the adhesive polymer composite to require the hydrogenated, nitrile rubber polymer to have a Mooney viscosity of less than 15.

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As stated previously in item 6 of FOA, Mori discloses a composite comprising a highly saturated nitrile rubber copolymer and a fibrous material (filler), said copolymer having a Mooney viscosity of 15 to 200, between 10 to 60% by weight of *unsaturated* nitrile units (i.e., 40-90% saturated) and further comprising butadiene units; wherein the composite exhibits good adhesion upon undergoing sulfur vulcanization (curing) thereby providing enhanced bond strength, mechanical strength and weather resistance making it particularly useful as a power transmitting or conveyer belt. (Abstract; col. 1, lines 7-19 and lines 44-56; col. 2, lines 25-44 and 60-65; col. 9, line 64 to col. 10, line 42; col. 19, lines 53-67; *See, particularly*, claim 6 in Mori) In addition to vulcanization, crosslinking of the copolymer can be accentuated by the presence of an alkylthio-containing monomer. (Col. 4, lines 40-61)

Mori discloses that the unsaturated nitrile-diene copolymer can be prepared by the copolymerization of an unsaturated nitrile monomer (such as acrylonitrile) and a conjugated diene monomer (e.g. butadiene) to form the copolymer, followed by hydrogenation prior to mixing with the fibrous material. (Col. 3, lines 9-13; col. 4, line 62 to col. 5, line 9) The composite is subsequently formed by mixing the hydrogenated rubber copolymer with a fibrous material, such as cotton; regenerated fibers; synthetic fibers, such as polyester fiber; and inorganic fibers, such as steel fiber, glass fiber or carbon fiber. (Col. 8, lines 36-67; col. 9, line 64 to col. 10, line 13) In forming the rubber formulation, other "auxiliaries" can be incorporated, such as various types of carbon black, silica, talc, and fillers, such as calcium carbonate and clay. (Col. 10, line 64 to col. 11, line 10)

In the Examples, Mori further discloses forming a sheet of a rubber formulation containing the hydrogenated copolymer of acrylonitrile and butadiene (col. 13, line 57 to col. 1, line 44) and coating aramid and glass fiber cords with this rubber formulation via a dipping treatment to provide composites that can subsequently be used as a belt (col. 18, lines 46-67; col. 19, lines 11-34; Table 6).

Accordingly, because Mori discloses the Mooney viscosity of the nitrile rubber polymer to be 15 to 200, and the independent claims recite said viscosity to be "less than 15", the ranges have an end point that nearly "touch each other" and are thus, so close that a *prima facie* case of obviousness exists. (*In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (The prior art taught carbon monoxide concentrations of "about 1-5%" while the claim was limited to "more than 5%." The court held that "about 1-5%" allowed for concentrations slightly above 5% thus the ranges overlapped.).

Particularly, Examiner draws Applicant's attention to *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997) (Claim reciting thickness of a protective layer as falling within a range of "50 to 100 Angstroms" considered *prima facie* obvious in view of prior art reference teaching that "for suitable protection, the thickness of the protective layer should be not less than about 10 nm [i.e., 100 Angstroms].") The court stated that "by stating that 'suitable protection' is provided if the protective layer is about' 100 Angstroms thick, [the prior art reference] directly teaches the use of a thickness within [applicant's] claimed range."). Similarly, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but

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are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). See MPEP 2144.05.

Thus, the claims, as amended, are anticipated by Mori.

16. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guerin'939, Ong or Guerin'320, either in view of United States Patent Application Publication Number 2003/0171500 A1 to Guo and Bender, hereinafter 'Guo'.

The applied references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

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that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Guerin'939, Ong and Guerin'320 were discussed above in paragraphs #11-13, respectively. Although each of the references disclose a polymer composite comprising a nitrile rubber having the recited Mooney viscosity, the references do not expressly teach a tape comprising said polymer composite.

However, Guo teaches a hydrogenated nitrile rubber polymer that displays superior physical properties, such as better heat aging resistance, enhanced low temperature flexibility, excellent abrasion resistance, excellent hot tear strength, and good adhesion at both low and high temperature, said properties rendering these hydrogenated nitrile rubber polymers useful in various applications, such as seals in situations where severe stress is encountered, high stiffness automotive belts, roll covers, and hoses. (Abstract; page 3, [0030])

Guo further teaches that these nitrile rubber polymers display good adhesion to materials, such as woven and non-woven fabrics, metals, plastics, natural fibers and synthetic fibers; displays good adhesion when the substrate to which it is applied also bears polar groups; and further maintains good adhesion at difficult, elevated temperatures. The aforementioned properties render these nitrile rubber polymers particularly valuable in adhesive applications, such as when a polymer coating material is affixed as an impregnant and cover of fabric material and will encounter heat. (Page 3, paragraph [0031]) Particularly, the high modulus and high abrasion resistance of these nitrile rubber polymers having good adhesion render them useful for high-

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hardness roll applications (tape) in, for instance, metal-working rolls, paper industry rolls, printing rolls, elastomer components for looms and textile rolls. (Page 3, paragraph [0032])

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to form a roll (layered tape) using the nitrile rubber polymer taught in Guo as the nitrile rubber polymer component in either Guerin'939, Ong or Guo'320's polymer composite. It would have been obvious to one skilled in the art to do this to attain a resultant tape roll to provide, e.g., a sealant having enhanced heat aging resistance, low temperature flexibility, excellent abrasion resistance, exceptional hot tear strength, and superior adhesion at both low and high temperatures as taught by Guo.

Thus, the instant claims are unpatentable over Guo and either Guerin'939, Ong or Gueirn'320.

Response to Arguments

The 35 U.S.C. 102 Rejection over Mori (item 6 on page 2 of FOA)

17. Applicant's arguments filed regarding the 35 U.S.C. 102(b) rejection as anticipated by Mori have been considered but deemed moot in view of the new grounds of rejection set forth above in paragraph #15.

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The 35 U.S.C. 103 Rejection over Ozawa and Mori (item 8 on page 4 of FOA)

18. Applicant's arguments filed regarding the 35 U.S.C. 103(a) rejection of claims 1 and 4-19 as unpatentable over Ozawa and Mori have been fully considered but deemed unpersuasive.

As stated previously in item 8 of FOA, Ozawa discloses a rubber composition having enhanced adhesiveness, modulus, set point and heat resistance for use in rolls, belts or other molded products; said composition comprising a hydrogenated acrylonitrile/butadiene copolymer rubber polymer, a crosslinkable polymer, a crosslinking agent (such as organic peroxide), and silica (and/or other fillers/additives); and wherein said rubber polymer has a high degree of hydrogenation (0-5% saturation). (Abstract; col. 1, lines 4-11; col. 2, line 44 to col. 3, line 25; col. 3, lines 32-65; col. 6, lines 34-41; col. 6, lines 60-67; col. 8, lines 18-26; See Examples including discussion of Adhesiveness Test results on col. 8-10 and Table 1)

Ozawa does not limit the Mooney viscosity for the hydrogenated nitrile rubber polymer. Nor does Ozawa explicitly disclose the molded product comprising said rubber polymer to be a sealant.

Mori was discussed above in paragraph #15. Mori further teaches that the highly saturated nitrile rubber copolymer should have a Mooney viscosity value between 15 and 200 to maintain its *bonding strength* (e.g. when used in a composite tape). If the Mooney value is below 15, satisfactory bonding strength may not be obtained. (Col. 2, lines 32-39)

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to choose a hydrogenated nitrile rubber polymer having a Mooney value between 15 and 200 for the saturated nitrile rubber polymer component of Ozawa's composition. It would have been obvious for one skilled in the art to do so to incorporate the teachings in Mori and attain a resultant adhesive tape composite roll (or a resultant molded product that can be used as a sealant) having satisfactory bonding and high vulcanization strength.

Moreover, it would have been within the purview of one in the art to use Ozawa's molded composition as a sealant to take advantage of the high heat resistance and modulus of Ozawa's rubber polymer composition.

In response to Applicant's argument primary arguments that the references fail to teach the Mooney viscosity to be less than 15, as discussed above in paragraph #15, a *prima facie* case of obviousness exists when the ranges disclosed in the reference and recited in the claims are so close to each other, that they nearly "touch" and almost overlap. In addition, regarding Applicant's reliance on a sample in the specification having a Mooney viscosity of 1.5, this feature (narrower range, smaller Mooney viscosity than that recited in independent claims 1 and 6) is not expressly recited in the rejected claims (i.e., a nitrile rubber polymer having a Mooney viscosity of about 1.5). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Thus, the claims, as amended, remain unpatentable over Ozawa and Mori.

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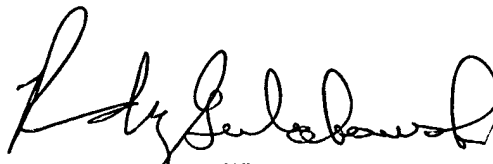
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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JJF/RAG


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